

Fuels and Fire Behavior Advisory

Mississippi

Date Advisory Effective – August 26, 2024

Subject: The combination of rapidly developing drought and areas of unusual tree mortality is expected to result in increasing wildfire occurrence and resistance to control across the state of Mississippi.

Discussion: Last summer's drought and subsequent beetle infestations have reportedly resulted in widespread tree mortality across the Lower Mississippi Valley, particularly in high risk pine fuels. The exposure of these abundant, heavy dead fuels to abnormally dry and hot conditions in recent weeks has led to an uptick in fire occurrence, with increased resistance to control noted in late August across parts of Mississippi. As live fuel moisture in southern rough and other herbaceous fuels is depleted by periods of above normal temperatures, unusually low relative humidity and below normal rainfall, problematic wildfires will become more likely across the area. These conditions have the potential to expand into neighboring states impacted by 2023's drought and beetle kill. While an expected increase in tropical activity during September could bring drought relief to parts of the state, of greater concern will be an increased potential for wind-driven fires if these systems track south and east of Mississippi.

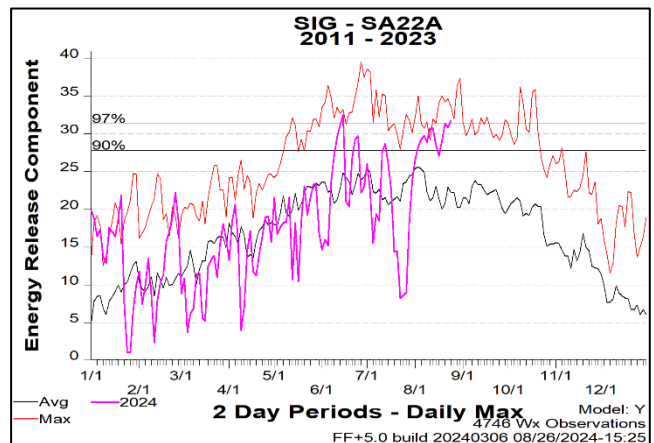
Difference from normal conditions: Pine mortality caused by infestations of the Southern Pine and Ips Beetles has been well documented by the Mississippi Forestry Commission and U.S. Forest Service following the historic late summer drought of 2023. Heavy dead fuels associated with hurricane debris may also be abundant in south Mississippi, particularly near 2021's Hurricane Ida track. More recently, drought is quickly developing or worsening in the state, with a number of weather stations observing their driest August on record. These dry conditions combined with hot temperatures have propelled the Keetch-Byram Drought Index (KBDI) to near record high levels for the summer months, especially in central and northern Mississippi. The Energy Release Component (ERC-Y) has surpassed the 97th percentile in many areas, while record low 1000-hour dead fuel moisture for this time of year is also being observed at least locally. Grasses are reported to be desiccated and curing in many areas due to recent drought stress, as well.

Concerns to Firefighters and the Public:

- Extreme fire line intensity is to be expected during both initial attack and extended attack.
- Cured grasses will increase rates of spread and resistance to control, especially with any wind in the fire environment.
- Typical barriers to fire spread, like roads, rivers, and hardwood bottoms may not be relied upon to stop fire progression.
- Standing dead pine trees may readily fall as the fire line reaches timbered areas.
- Active fire behavior may extend into the overnight hours during periods of poor RH recovery.
- Critical fire weather may be associated with but is not limited to: very hot and dry conditions preceding cold fronts, dry cold fronts, dry and breezy conditions west and/or north of tropical storms or hurricanes, sea breeze fronts and erratic wind gusts associated with outflow from nearby thunderstorms. Lightning in the absence of widespread rain may also result in heavy initial attack.

Mitigation Measures:

- Fire managers should be prepared to support periods of increasing fire occurrence, as well as complex, long-duration incidents.
- Firefighters should anticipate constructing wider than normal control lines that take longer to push in beetle-kill snag patches, with dozers and graders (maintainers) working in tandem for safety with engine support.
- The time and effort toward mop up will continue to increase as heavy dead fuels hold heat, especially during periods of abnormally hot and dry conditions.



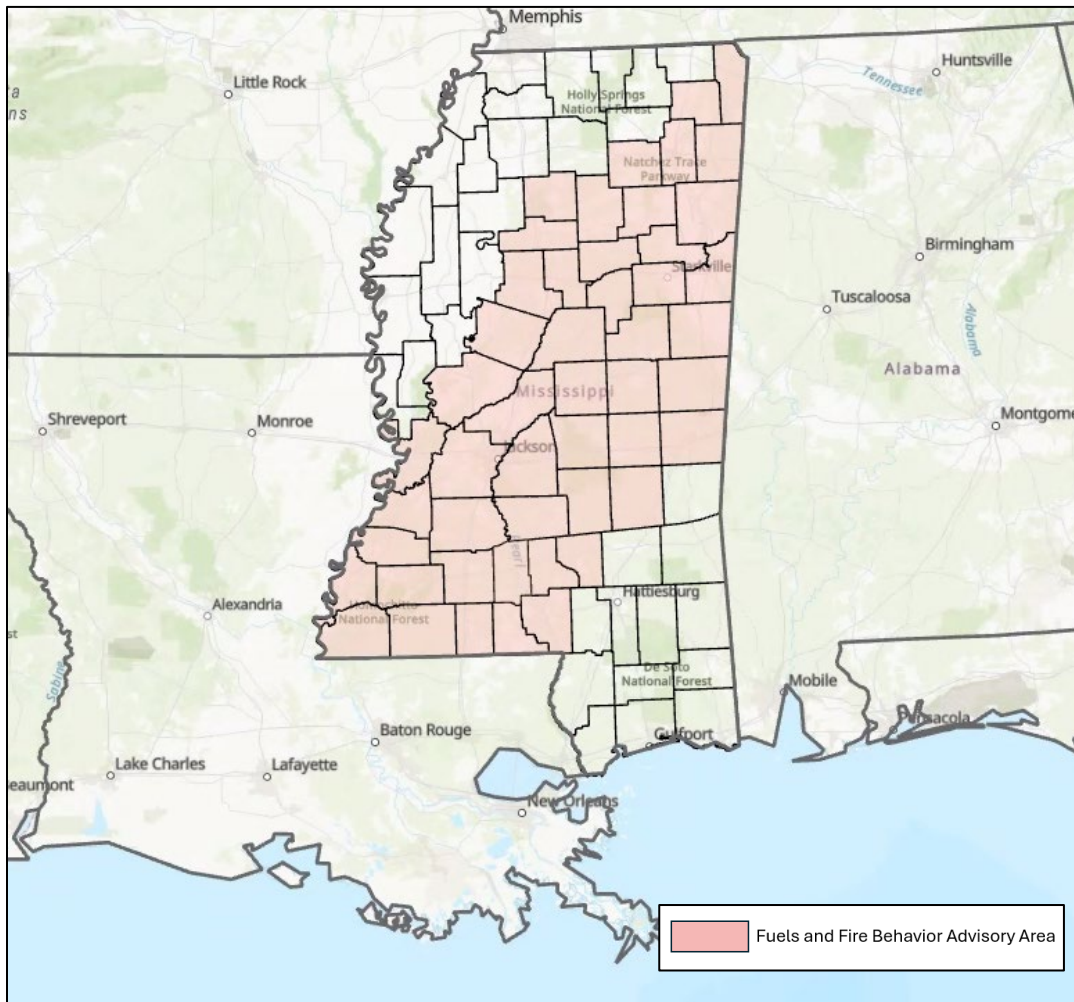
ERC-Y in Central and Southern Mississippi (PSA SA22A) has recently surpassed the 97th percentile.

Issued By: Southern Area Predictive Services in coordination with state and federal partners.

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Pine mortality is evident in Itawamba County, Miss. (left, Mississippi Forestry Commission). 1000-hour fuel moistures have decreased markedly in Mississippi, resulting in heavies burning to white ash (right, Mississippi Forestry Commission).